# Research Brief

## Year 2000 Summer School in South Carolina

## A Follow-up Study

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### Introduction

A previous study of South Carolina summer school programs (Monrad & May, 2001) examined program structure and costs. With 79 of 86 (92%) school district instructional leaders responding to a questionnaire, 74 districts indicated that they conducted summer school during the summer of 2000. These school districts reported serving 59,509 students, with an emphasis on students achieving below grade level in grades 3-8. Students served in grades 3-8 represented approximately 36% of the students scoring below basic on the 1999 Palmetto Achievement Challenge Test (PACT). The summer school sessions offered by school districts varied widely in the number of hours per day (3-7 hours) and in the total number of days included in the summer school session (10 to 31 days). The typical district conducted a session lasting about 4.5 hours per day for almost 19 days. The average cost for instructional services was about $307 per student and the typical transportation cost was just under $40 per student. The FY2000 allocation of $18 million for both summer school and comprehensive remediation funded only one third of the districts' summer school costs.

Several items on the questionnaire addressed student achievement and improvement. Specifically, instructional leaders were asked their views of the effectiveness of the summer programs with students just below grade level, students 1 to 2 years below grade level, and for students two or more grades below grade placement. These results, depicted in Figure 1, are consistent with those found when principals were asked the same question about students on academic plans (Monrad & May, 2000): the lower the achievement of the students served, the less effective the summer school program was perceived to be.

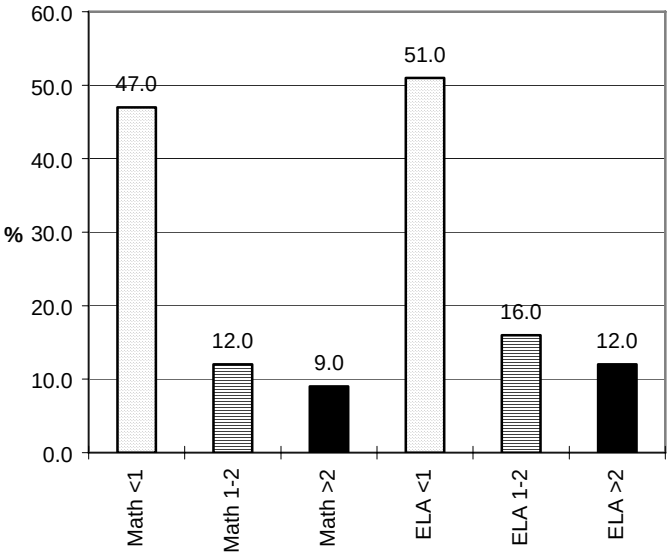


Figure 1. Percentages of respondents rating their summer school program "very effective" for students varying in the degree to which they are achieving below grade placement.

In addition to the ratings of program effectiveness, instructional leaders were asked whether their districts evaluated the summer programs and whether or not pretests and posttests were administered as part of the evaluation. Thirty-seven respondents indicated that pre and posttests were administered while 12 said that there was an evaluation of the summer school program. The purpose of the present study was to conduct follow-up interviews with these 37 district instructional leaders in order to gain a better understanding of the program evaluation approaches and instrumentation utilized. The investigators were interested in examining the following aspects of the summer school programs:

- the curricula used in the programs;
- approaches to evaluation, including pretesting and posttesting;
- the characteristics of students targeted for instruction in summer school;
- administrative issues (e.g., the typical student-teacher ratios and the level of difficulty in hiring teachers);
- parent communication and involvement; and
- plans for summer school 2001.

## Results

Multiple attempts were made to schedule interviews with all 37 school district instructional leaders and 26 interviews (70%) were eventually conducted. The districts included 10 from the upstate, 9 from the midlands, and 7 from the low country. The student average daily membership (ADM) at the 135$^{th}$ day for the year 1999-2000 ranged from about 1000 to greater than 20,000 – the mean was 7,693. Among the districts in the study, the median percentage of children eligible for free or reduced-price school lunches was 60.

### Curricula

Summer school curricula in the 26 districts fell into two categories: locally developed and commercially developed. Eleven (42%) of the districts reported using a locally developed curriculum in English-language arts (ELA) and in mathematics. While the structure and content of the locally developed curricula were not systematically targeted by the interview protocol, a number of respondents commented that the individual teachers decided what curricula materials would be utilized in their classrooms. This is consistent with other anecdotal data suggesting the many districts view summer school as an extended year program featuring materials "carried over" from the regular school year. As one instructional leader commented, "Some kids need 200 days, not 180, to master the same material." Other instructional leaders were looking for a change of pace. In describing the Voyager program, one instructional leader stated that "it is integrated, exciting, and different from the regular year materials."

The commercial materials/publishers mentioned included the following:

- ELA and math curricula from Computer Curriculum Corporation
- Soar to Success (ELA) published by Houghton Mifflin
- ELA and math curricula from Voyager Expanded Learning
- ELA and math curricula from Compass Learning, Inc.
- ELA and math units from Options Publishing, Inc.
- Moving With Math, published by Math Teacher's Press, Inc.
- South Carolina PACT Coach Series (ELA) by Educational Design
- Math curricula by Edvision
- ELA and math curricula from Lightspan

The publishers' web sites, which provide descriptions and/or samples of some of these materials, appear in Appendix A. In a few cases districts used different materials at the elementary and middle school levels. For the most part, however, the curricula were common to all participating schools.

**Evaluation**

Most (14) instructional leaders reported that the pretests and posttests used for summer school evaluation were locally developed. Some were the result of a district-wide or regional effort and drawn from a bank of items. Others were "teacher developed." According to one instructional leader, "schools did their 'own thing' with curriculum and assessment." Locally developed instrumentation purportedly encouraged teacher "buy-in" and "ownership." In most of the remaining cases, the pretests and posttests used for evaluation purposes were supplied by the publisher as part of the curriculum materials. These assessments were either paper and pencil or computer-based. Moving with Math, for example, includes pretests and posttests, as well as the instructions for administering and recording scores in the teachers' guides. Similarly, the Voyager and Lightspan curricula offer companion testing. Other instrumentation cited for the pretesting and posttesting included the Challenge the PACT series, distributed by Contemporary Publishing Company; the PACT Coach series from Educational Design; Tests for Higher Standards (Flanagan and Mott); and the STAR Reading and STAR Math tests, publications of Renaissance Learning, Inc.

Administered at the beginning of the summer session, or the end of the regular school year, nearly all participants indicated that the pretest served both evaluative and diagnostic functions. All of the district instructional leaders indicated that the pretests and the posttests used in their summer school programs were aligned with the state standards. The interview protocol did not include follow-up questions regarding the methods used to achieve alignment nor how the degree of alignment was assessed. In retrospect, this information might have proved to be informative. With a handful of exceptions, the pretests and posttests were either not retained by the school districts or had been placed in individual student folders.

Instructional leaders who prepared reports of their summer school programs were asked to provide the researchers with a copy of the report. The three reports that were

received are described briefly in the following sections. The names of the districts have been changed to protect confidentiality.

♦ Dogwood District: Dogwood District is a mid-sized school district serving students from rural and suburban areas. The 2000 summer school program served over 1,400 students in grades 3-8 in a 5-week program. Students were selected for the program if their 1999 PACT scores were below basic or if they were failing (or doing poorly) in the classroom. Students received ELA and math instruction daily using several commercial curricula. The district collected evaluation data which included student demographic information, course grades, promotion status, and survey responses from students and teachers. The evaluation was primarily qualitative with survey responses transcribed verbatim. There was no direct measurement of student improvement noted although 57% of the students were reported to have received grades of A, B, or C on their summer course work. Students and teachers had positive perceptions of the summer program and made creative suggestions for program improvement.

♦ Pineville District: Pineville District is a small, rural district that conducted a 2000 summer school program for approximately 300 students in grades 3-8. The 10-day program focused on students with academic plans. The students' regular classroom teachers provided the summer school teachers with individual student recommendations describing the student's instructional needs. Students were provided instruction in ELA and math and spent 60 minutes per day working on these skills in a computer lab (30 minutes for ELA and 30 minutes for math). The district provided each school with a summer school evaluation survey which was completed by the lead teacher. The survey asked the teachers to rate aspects of the program such as students' instructional gains, facilities, transportation, etc. on a 5-point scale. The survey also provided sections for the teachers to comment on the positive aspects of the program and needed changes. Teachers were very positive about the students' instructional gains (scores of 3.5 to 5.0) and recommended extending the program for additional weeks.

♦ Maple Grove District: Maple Grove District is a large district with a heterogeneous population of students from rural, suburban, and urban areas. The summer school program in 2000 served almost 1,000 students in grades 3-8. Students in grades 3-5 were identified for the program if they scored below basic on the PACT and were functioning I year below grade level in the classroom. Students in grades 6-8 were targeted if they scored below basic on the PACT and were functioning 2 years below grade level in the classroom. The students attended a 3-week program for 4 hours per day where they received ELA and math instruction with commercial curricula. Pretest and posttests for the

math component (provided by the curriculum publisher) were administered to all students. No formal evaluation was conducted of the ELA program. The publisher analyzed the evaluation data and provided a report to the district that included attendance data by student along with individual student scores by teacher. According to the publisher, the evaluation data showed that the average change in mean scores from the pretest to the posttest was 22%. In addition, approximately 31% more students achieved a passing rate of 70% on the posttest compared with the percentage of students passing the pretest.

**Students Targeted for Participation**

Almost all of the instructional leaders cited more than one reason for targeting students for summer school placement. The presence of an academic plan and low scores on the PACT were the most common. Some indicated that students were targeted who would probably not be promoted or "were in danger of failure." In several districts the approaches differed by grade level. In one district, for example, students in grades 3-5 were targeted for summer school if they were below basic on the PACT and performed below grade level in the classroom. In grades 6-8, on the other hand, the PACT criterion was the same as for grades 3-5, but classroom performance needed to be two grades below grade level. For the great majority of districts, students in danger of being retained were deemed the most appropriate group to serve in a summer program. These were the most needy students and the ones for whom summer programs were intended.

For several districts, on the other hand, the limited resources available for summer programs could be best spent with students that were "borderline," scoring just below basic on PACT or having passed either reading or math. Students performing well below grade level in both reading and math were viewed as almost certainly having to repeat the grade; thus, summer school was judged to be clearly insufficient for these students. While not denied access to summer school, very low achieving students were not the focus of the summer school identification process in these school districts.

Summer school programs at the elementary level almost always included both ELA and math blocks for all students. At the middle school level, however, a number of districts provided double blocks of ELA or math for students needing additional time in only one

area. For 21 of the districts, the blocks were either 90 or 120 minutes in length. The shortest blocks were 60 minutes and the longest were 240 minutes.

Administrative Issues

Instructional leaders estimated the pupil-teacher ratios for their districts. These values, presented in Table 1, ranged from 10:1 to 20:1.

Table 1

Estimated Pupil-Teacher Ratios

| Pupil-teacher ratios | Frequency |
|---|---|
| 10:1 | 2 |
| 11:1 | 1 |
| 12:1 | 5 |
| 13:1 | 2 |
| 14:1 | 2 |
| 15:1 | 7 |
| 16:1 | 3 |
| 17:1 | 0 |
| 18:1 | 2 |
| 19:1 | 0 |
| 20:1 | 2 |

Four interviewees reported slightly different ratios for elementary and middle school classes. In these instances, which always reflected slightly lower class sizes at the elementary than at the middle school levels, the average of the two is reported in Table 1. All districts reported using certified teachers in their summer programs. In addition, several districts reported that the bus drivers stayed at the school during the day and assisted with a variety of activities, everything from providing clerical assistance to the teacher to student tutoring. Given the abbreviated length of the school day, it was advantageous to pay the drivers to stay at school rather than return home and then come back for end-of-day transportation.

District leaders reported that one-on-one instruction was infrequently provided to students. Of the 26 interviewees, 12 indicated that one-on-one instruction was “seldom” provided; another 11 said “sometimes,” and only 3 responded “often.” One of those responding “often” used lead teachers and rotating aides to provide individualization while the other involved bus drivers, high school students, and college students under the

supervision of the teacher. This latter interviewee, commenting on funding, said that "we are able to provide this only because we have a 21st Century (Learning) Grant."

Hiring teachers for summer school presented a problem in many districts. Eleven (42%) of the instructional leaders said that they encountered a problem in hiring teachers. Family time, competition with other programs, burn-out, and the adequacy of compensation were all mentioned as reasons. In order to encourage participation, leaders mentioned a 4-day week, higher pay, and small class sizes as enticements. One instructional leader commented that "what we really need is year-round school with remediation after each 9-week term."

**Parent Communication and Involvement**

Parent communication was rated as "little" by 16 interviewees, "somewhat" by 10, and "great" by none. In most cases the extent of the involvement was in the routine reporting of student progress, both during and at the end of summer school. This was a formalized process in some cases while in others it was an informal, teacher-planned and implemented activity. In general, the formality of the procedures was greater for students in the middle grades and with students who were in danger of having to repeat the grade. As one interviewee said, "we made special efforts if we anticipated retention."

Several district instructional leaders reported that a signed contract was required of parents and students at the beginning of the summer session relating to policies and procedures, especially student attendance and behavior requirements. Said one interviewee, "Two missed days and you are gone." Typically, a report card or letter were provided at the end of the sessions in addition to periodic conferences and reports during the session. One interviewee indicated that the district employed a parent coordinator in the primary grades to try to help with parent involvement. End of session activities, such as a luncheon and a banquet recognizing student learning, were judged successful in garnering parent participation. An interviewee made this poignant statement: "One parent told me that this was the first time her child had been recognized for academics."

One district reported that parent volunteers assisted in schools and classrooms during the summer school session, but "we found that it was best not to place a parent in their own child's room." Another district leader said that they "worked with some parents to teach them about concepts in the PACT Challenge books so they could help their children.

We also had programs with laptops for grades 6-12 when parents had to come to five sessions in labs with their children."

**Plans for Summer School 2001**

Of the 26 districts, 24 reported that they planned to conduct summer school during the summer of 2001. Ten district leaders indicated that their districts would be serving students in grades 3-8, one 2-8, and the remainder either K-8 or 1-8. In almost all cases, the students targeted for participation and the curricula planned were the same as those in summer school 2000; one district leader said that "students just below grade level can opt for a waiver from summer school provided they attend an after-school program." All respondents stated that pretests and posttests were planned. Eighty percent of the respondents said that their summer schools would begin during the first or second week in June. One district had a beginning date on June 18, 2001, and one on July 2, 2001. At the time of the data collection, two districts were uncertain of their starting date. While not specifically asked, several district instructional leaders commented that they viewed their summer programs as extended school year programs: thus, the starting dates were scheduled early in the summer.

A number of districts were planning modifications of their programs for summer school. Five districts indicated that they would be offering summer school for 4 days per week and/or would reduce the number of hours per day in order to avoid student and teacher "burn-out" and to entice more teachers to participate. As one district instructional leader commented: "Last summer's 6-hour sessions were just too long for teachers and students." Several others planned to distinguish between those students needing either ELA or math instruction versus those students needing both; students would receive enrichment in ELA or math during the second block. Four districts also mentioned that they planned to upgrade summer school curriculum and testing. Among the efforts planned was the addition of science to the content offerings.

One district planned to dramatically expand its parent involvement by providing a parent education program that will run concurrently with the student summer school program. Parents will spend the day at school (riding the bus to school with their children will be an option) in training designed to explore a) student discipline; b) student academic assessment; and c) techniques to improve student learning. Three district leaders reported

that the grade levels and numbers of students served would be expanded in 2001. One district indicated that because of continuing funding issues, summer school 2001 would be the last year that the district offered a summer school program.

## Discussion

Summer school programs, because of their brevity and specificity of content, require pretests and posttests closely aligned with the curriculum. Global achievement measures may not be aligned with the summer school curriculum, and/or they may have too few items measuring the constructs taught to reliably detect improved mastery of specific skills (lack of sensitivity). If either alignment or sensitivity is inadequate, real changes in student learning may not be apparent in the evaluation data. Many districts, recognizing the importance of alignment and sensitivity to instruction, have chosen to use pretests and posttests supplied with the curricula.

While the technical adequacy of pre and posttests supplied with the curricula materials was not examined for this report, such a step should be taken prior to reporting change (gains) based upon these tests. If the items on a particular publisher's posttest are easier than those on the pretest, for example, it stands to reason that performance will show "apparent" improvement regardless of the degree of "real" improvement. And simply "eye-balling" the test items is not adequate; the publishers should have available technical data to, among other things, support the equivalence of the difficulty of the pre and posttests.

A related evaluation design consideration involves the availability of non-treatment comparison groups. Pretest-posttest evaluation designs have a well-known inadequacy: the gains observed might be the result of maturation, history, or regression-to-the-mean rather than the result of the instructional treatment. In an extensive analysis of the summer school literature, Cooper, Charlton, Valentine, and Muhlenbruck (2000) reported considerably smaller effect sizes for studies employing comparison groups than for studies based upon pre-post analyses. They found effect sizes of about one-seventh of a standard deviation for evaluations using random assignment versus one-fourth of a standard deviation for all evaluations. Parenthetically, it should be noted that Cooper, et. al. found that more effective summer school programs provided small group or individual instruction and required some form of parent involvement. While a number of the districts in the present study reported class sizes under 15:1, few reported extensive use of individual instruction, and none indicated that they engaged parents to a "great" degree in the programs.

Cooper and his associates also found that math achievement seemed to be more readily improved by summer school than reading achievement. The authors theorized that it

is possible to interpret the mathematics-reading discrepancy within the context of "summer loss:" math skills tend to deteriorate faster during the summer because "practice in reading is more embedded in students' everyday environments outside of school than is practice in mathematics" (p. 93).

Districts interested in seriously evaluating the effectiveness of their summer programs should be mindful of the adequacy of both the pre and posttest instrumentation and the evaluation design employed. Test security can also become an issue, particularly if the pre and posttests are part of the curriculum materials and the evaluation is perceived as high stakes. A number of larger districts employ research staff members that can provide assistance with evaluation planning and implementation. Because of both the importance and the cost of summer programs, state or regional resources could be made available to assist districts, particularly districts lacking the staff and resources, with planning and implementing summer programs. Regional educational laboratories, the National Science Foundation Science and Math Labs, and regional consortia are among the potential sources of such assistance. At its most basic level, this support might take the form of arranging opportunities for districts to share experiences with summer school curricula, tests, and evaluation procedures; assisting with assessment of alignment of curricula and assessment tools with statewide standards; providing research reviews and technical data; and conducting professional development training on summer school research and evaluation issues.

From a research standpoint, work should be conducted to examine the following:

- the appropriateness and effectiveness of summer school programs for students at various achievement levels;
- the relationship between summer gains and the amount of focused learning time in the programs (see Anderson, 1993);
- the effects of summer programs on grade retention; and
- the effects of summer programs upon PACT performance over time.

The Accountability Division of the Education Oversight Committee (EOC) recently analyzed ELA and mathematics PACT data for the 1999 and 2000 school years to examine the longitudinal performance of students across the state (EOC, May 2001). The Division found that almost 36% (60,477) of the students scored below basic for the 2 years on one or both

of the subject area tests. For students eligible for free or reduced-price school lunches, the figure was 53%. Slightly over 17% (29,235) of the students scored at below basic levels for both years on both the ELA and mathematics tests. Among the state's 86 school districts, 48% of the districts have 40% or more of their students scoring below basic for 2 years in ELA or math. One approach to examining summer school effectiveness would be to determine the relationship between summer school participation and future success or failure on subsequent PACT administrations. Given the scope of the problem, a more salient research question would be difficult to identify.

## References


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Monrad, D. and May, J. (2001). Research Brief: Year 2000 summer school in South Carolina - program description and costs. Columbia, South Carolina: South Carolina Educational Policy Center at the University of South Carolina College of Education.

Education Oversight Committee (2001). Working Paper - May 3, 2001: Longitudinal analysis of PACT data for 1998-99 and 1999. Columbia, South Carolina: South Carolina Educational Oversight Committee, Accountability Division.

# APPENDIX A

Publishers' Web Sites

Compass Learning:
www.compasslearning.com

Computer Curriculum Corporation:
www.ccclearn.com

Contemporary Publishing (Challenge the PACT Series):
www.contemporarypublishing.com

Educational Design:
www.educationaldesign.com

EdVISION:
www.edperformance.com/performance/zaboutEdVISION.htm

Fanagan and Mott (Tests for Higher Standards):
www.tfhs.net

Houghton Mifflin (Soar to Success):
www.eduplace.com/rdg/soar

Lightspan:
www.lightspan.com

Math Teachers Press (Moving With Math):
www.movingwithmath.com

Options Publishing:
www.optionspublishing.com

Renaissance Learning (STAR Reading):
www.renlearn.com

Voyager Expanded Learning:
www.voyagerlearning.com